

Independent Laboratory Testing

PART 6 Regulations

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What Testing Will MSHA Accept ?

- MSHA Standard Test Procedures
- Customized MSHA Standard Test Procedures
- Non-MSHA test procedures

MSHA Standard Test Procedures

- Contact Approval Certification Center at
- 304-547-0400
- (UNDER-CONSTRUCTION)
WWW.MSHA.GOV/TECHSUPP/ACC/ACHOME.HTM

Example MSHA STPs

- Explosion Tests for Explosion Proof Enclosures
- Spark Tests for Intrinsically Safe Equipment using a PTB Spark Test Apparatus
- Small Component Surface Temperature Tests
- Cap Lamp Batteries Drop Test

CAP LAMP BATTERY DROP TEST

- CAP LAMP BATTERY DROP TEST ASTP2225 2004-05-11.doc

- **5.0 TEST EQUIPMENT**

- Drop Test Apparatus (**Lab Division Model 5D 100S**), or other means of dropping the battery in a free-fall without obstruction. The floor of the drop test apparatus is constructed of an oak planking not less than 1 inch thick. A nonrestrictive guide (swing arm) is used to assure a free-fall drop on the impact point of the battery. When placed on the arm of the apparatus, the battery will fall 3 feet \pm 1 inch onto the oak floor
- Temperature measuring device capable of measuring ambient temperature \pm 1° C.
- Tape measure or yard stick
- Camera

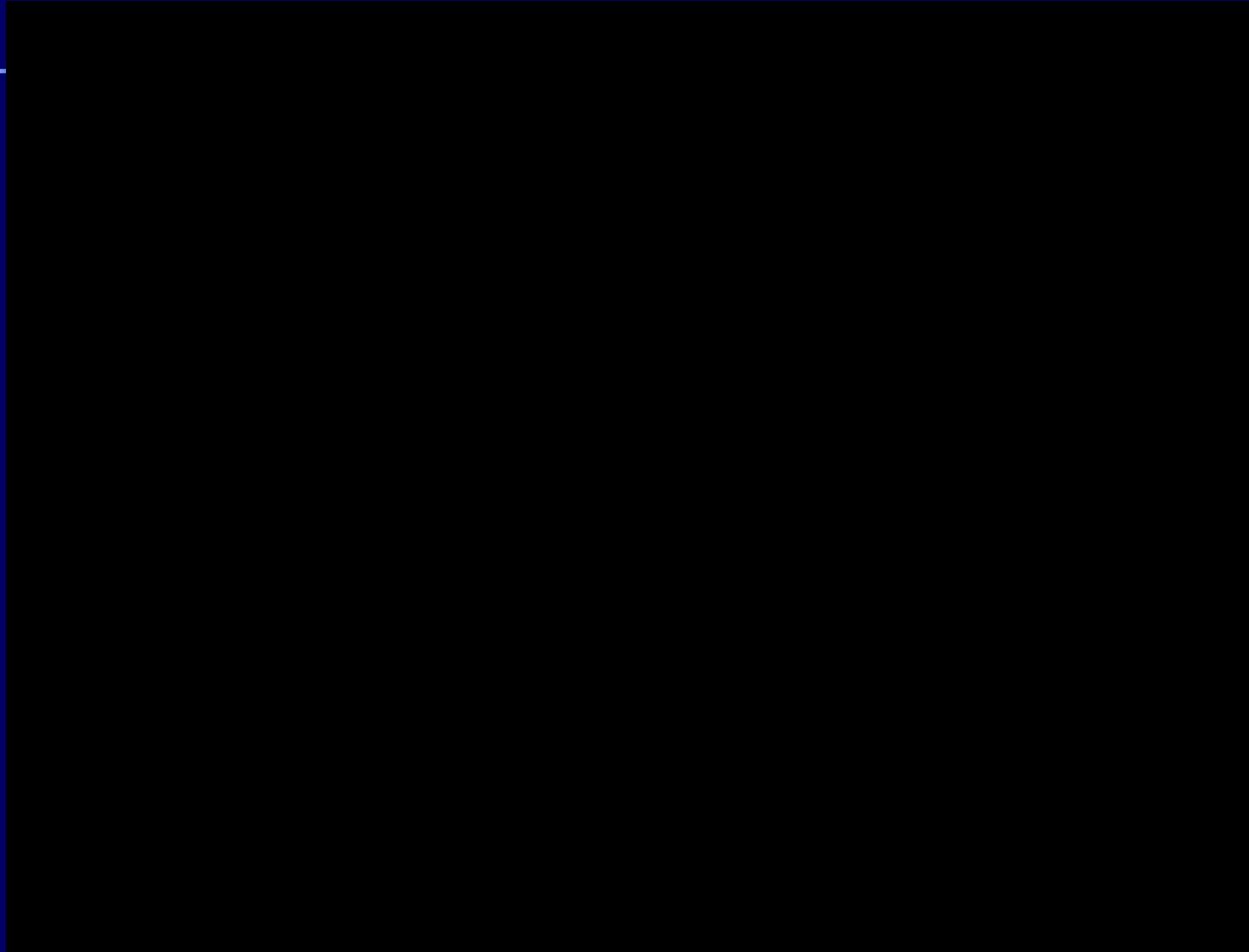
Test Data Accuracy

- Test Equipment MUST Be Calibrated
- “Annual” or “Calibrate When Used”
Calibration of Equipment is required

Valid Equipment Calibration Dates

MUST BE Recorded on all Test Data
submitted to MSHA

Example TESTS



**If your product Fails an
MSHA test**

**Consult your A&CC
Investigator**

- **8.0 TEST DATA**

- 8.1 Ambient temperature**

- 8.2 Test equipment identification**

- (e.g., manufacturer, model number, part number, serial number, calibration due date).

- 8.3 Test number**

- 8.4 Sample identification (e.g., sample number, manufacturer, model number, part number, serial number).**

- 8.5 A pictorial sketch of the sample may be used to identify the impact point.**

- 8.6 Results of the visual inspection after each drop.**

- 8.7 Reasons for failures must be documented.**

Part 6.10 (c) & (d)

- 6.10 (c) Requires Independent Labs to witness or conduct all testing
- 6.10 (d) Allows MSHA to require additional or repeat testing and these tests may be witness by MSHA
- Allows MSHA to conduct repeat testing at applicant's expense

Customized MSHA STPs

- Some Tests are Customized for Approved Products
- Tests are Customized to Address Unique Design Features of a Product
- Test are often Customized to Address New Technology used in the Mining Industry

Customized MSHA STPs

- **Standard Tests will be Customized by**
 - **Approval & Certification Center Personnel**
 - **With Input from:**
 - **EQUIPMENT MANUFACTURER**
 - **INDEPENDENT LABORATORY**

Customized Spark Test

- In the Standard Test the PTB Spark Test Apparatus Spark Dwell Timing is set at 80 RPM
- Some equipment using active current or voltage sensing may not generate their worst case test condition if the Dwell Timing is set at 80 RPM
- Spark Dwell Timing of the PTB test apparatus is set at something other than 80 RPM

Customized Explosion Test

- Explosion Proof Enclosure Internal Dimensions may indicate Pressure Piling.
- Observation of Increased Pressure Spikes and Audible Increases in explosion volume may confirm pressure piling
- Additional Explosion Tests will be conducted beyond the Standard Test Procedure

**Take Advantage of
Testing Consultations
with the
Approval & Certification
Center Engineers and
Technicians**

Non-MSHA Test Procedures

- Underwriters Laboratories (UL)
- SIRA
- TEST SAFE
- CSA

Non-MSHA Test Procedures

TEST DATA Generated from NON-MSHA Test Procedures may be Accepted by MSHA

If the conditions in the test procedure's are the same as MSHA's Standard Test Procedure.

And if the test data generated by the Non-MSHA procedure is comparable to MSHA generated test data

Part 6 Testing Summary

- TEST DATA must be submitted to MSHA as part of the test report.
- PASS/FAIL Conclusions of testing
WILL BE DETERMINED by MSHA
- Consult Approval & Certification Center Engineers and Technicians for assistance regarding Test Procedures, Test Set-Ups and Test Data